

CLAIMS:

1. A vibration generator (11) comprising a housing (1), a weight (3) that is movable relative to the housing in a manner operatively imparting a vibratory movement to the housing, and means for imparting movement to the weight in a manner causing said vibratory movement of the housing, the vibration generator being characterised in that the weight is in the form of a magnetic element that is freely movable along a track (2) within the housing and in that a plurality of electric coils (6) are associated with the track in a manner enabling sequential energisation of the coils to create movement of the magnetic element within the track in a manner imparting a vibratory movement to the vibration generator.
- 15 2. A vibration generator as claimed in claim 1 in which the track is an endless track that follows a path selected from a circular and an elliptical path.
- 20 3. A vibration generator as claimed in either one of claims 1 or 2 in which the coils are generally equally spaced along the track.
- 25 4. A vibration generator as claimed in any one of the preceding claims in which the coils are wound around the housing concentrically with the track therein at spaced positions along the track.
- 30 5. A vibration generator as claimed in any one of the preceding claims in which the track has a surface layer (4) operatively engaged by the magnetic element, said surface layer having desirable qualities including that of sound absorption.

6. A vibration generator as claimed in any one of the preceding claims in which the magnetic element is spherical in shape in which case the track is of generally circular shape in cross-section.
- 5 7. A vibration generator as claimed in any one of the preceding claims in which the housing and coils are encased within an outer shell (8) optionally cast or moulded in situ to permanently enclose the housing and coils.
- 10 8. A vibration generator as claimed in any one of the preceding claims in which the housing is sealed in a closed condition following evacuation of air and optional purging with a suitable gas.
9. A vibration generator as claimed in claim 2 in which an auxiliary vibration generator (14) having a reciprocally movable weight (15) therein is configured to locate in the centre of the vibration generator with the axis of movement of the weight being at generally right angles to the plane of the track in order to generate vibrations in two transverse directions.
- 20 10. A vibration generator composite unit comprising a vibration generator as claimed in any one of claims 1 to 9 in which a second vibration generator (13) is located coaxially therewith and wherein the two vibration generators are either independently controlled, or interdependently controlled.
- 25 11. A vibration generator composite unit as claimed in claim 10 in which the vibration generators are of different diameters with a smaller one being received within a larger one in substantially coplanar relationship.

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12. A vibration generator assembly comprising at least two vibration generators or vibration generator composite units as claimed in any one of claims 1 to 11 wherein the vibration generators or composite units are connected to a common control unit (9) that controls the operation of the various electric coils associated with the tracks of the various vibration generators and wherein the control unit can optionally be configured to cause the vibration generators to create interference waves consequent on the interaction of the individual vibrations created by each vibration generator.

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